USSR

UDC 546.27'17:541.121.16

SAKSONOV, G. V., BURYKINA, A. L., MEDVEDEVA, O. A., and KOSTERUK, V. P., Institute of Problems of Material Sciences, Academy of Sciences UkrSSR

"Interaction of Boron Nitride with Transition Metals, Their Borides and Nitrides"

Kiev, Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 50-57

Abstract: An experimental study was made of the interaction of boron nitride with titanium, zirconium, hafnium, and with zirconium nitride and boride during hot-pressing of the powder mixture in the 1200-2000° C temperature interval. The results are discussed by reference to microstructures of hot-pressed specimens of the Ti-BN, ZrN-BN, Hf-BN, and ZrB_2-BN systems. During interaction of boron nitride with metals, a mixture of nitride and boride phases of metals develops during which, with rising temperatures, the content of the metal nitride decreases. The interaction of boron nitride with zirconium nitride results in the formation of zirconium diboride at 2000° C. At this temperature, boron nitride does not interact with diborides of transition metals. Boron nitride is recommended for works in contact with refractory metals of group IV at up to 1200° C. Composites of diborides of transition

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USSR

SAMSONOV, G. V., et al., Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 50-57

metals with boron nitride can be used at up to 2000° C. Six figures, one table, six formulas, 20 bibliographic reference.

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USSR

UDC 669.011.7

SAMSONOV, G. V., KOVTUN, V. I., TIMOFEYEVA, I. I., ROGOZINSKAYA, A. A., And VINITSKIY, A. G., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR, Kiev

"Nature of the High Microhardness of Surfaces Hardened by Friction"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 4, 1973, pp 26-30

Abstract: Strengthening of surfaces by dry sliding friction in a vacuum was studied for refractory metals of groups IV-VIII of the periodic system. Microhardness of the samples rises to a rather high maximum value and then drops off. In addition to microhardness, lattice parameters, mosaic block size, type II distortion, and dislocation density of the metals were determined after undergoing friction. The data on the fine structure and dislocation density in the deformed layers do account for the high degree of metal hardening nor do they explain the variance in metal strengthening at the characteristic pressure equal to 25% of the tensile strength. It was shown that the decisive factor in the strengthening is the electron structure of the metals and the change in this structure during deformation by friction. 6 figures, 3 tables, 21 bibliographic references.

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USSR

Miscellaneous

UDC: 539.4.019.1

SAMSONOV, G. V., ALEKSEYEVSKIY, V. P., BOZHKO, S. A., and YAROSH, V. V., Kiev

"The Effect of Explosion on Refractory Carbides"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 73, pp 108-112

Abstract: The authors study the effect of explosion on refractory carbides. Hot pressed specimens of the refractory $TiC_{0.98}$, $ZrC_{0.96}$, and $NbC_{0.99}$ carbides were subjected to the action of shock waves. The reduction by explosion was carried out in steel cylindrical storage ampules with pressure in the detonation front of the explosive of 120 and 67 kbars. After the explosion, higher microhardness was observed in the case of niobium carbide and higher dislocation density in the case of all of the other carbides studied up to 10^{10} cm^{-2}.

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USSR

UDC 669.018.4:536.2:621.762.4

SAMSONOV, G. V., BOGOMOL, I. V., L'VOV, S. N., and LESNAYA, M. I., Institute of Problems of Material Science, Academy of Sciences UkrSSR, Institute of Physics of Metals, Academy of Sciences UkrSSR

"Thermal Conductivity of Cermets Containing Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 11 (119), Nov 72, pp 62-65

Abstract: A study was made of the thermal conductivity of cermets of the systems TiC-Nb, TiC-Ta, TiC-Mo, and TiC-W, containing 25, 50, and 75 at% metal, within the 20-1100°C temperature range. The thermal conductivity was measured on hot-pressed specimens according to a previously described method [Poroshkovaya Metallurgiya, No 9, 89, 1966]. Temperature and concentration dependences of thermal conductivity of the cermets are shown. A considerable drop was established for the thermal conductivity coefficient of the cermets in comparison with introduced metals. A relative increase of the thermal conductivity coefficient is shown to take place at a constant temperature in a number of the investigated compositions. Two figures, one table, seven bibliographic references.

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USSR

UDC 537.583

SAMSONOV, G. V., Corresponding Member of the Academy of Sciences Ukrainian SSR, and KUNYTS'KYY, YU. A., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Thermionic Properties of Diborides of Transition Metals of Groups IV-VI"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1048-1050

Abstract: The article gives qualitative representations of the nature of the thermionic emission of transition metals of groups IV-VI. The dependence of the work function of transition metal diborides on the statistical weight d^5 of stable configurations (SWASC d^5), developed by I. F. PRYADKO, is plotted. It is found that at the very same principal quantum number of valence electrons for a metal there is a decrease in the work function of diborides with an increase in the SWASC d^5 of the metal. The following regularities are also observed in work function varia-

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USSR

SAMSONOV, G. V., and KUNYTS'KYY, YU. A., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1048-1050

tions according to atomic number: a) the work function of diborides is less than that of pure metals; b) the decrease in the work function for diborides as compared to the metals increases from group IV to group VI; c) an increase in the atomic number of a metal is accompanied by a decrease in the work function of the corresponding diboride.

The explanation for these regularities in work function variations is based on the volume concept of the work function and the use of the condensed state configuration model. It is shown that nonlocalized electrons of the atoms of a metal play a dual role in diborides, on the one hand stabilizing the sp^2 configurations of the boron atoms, on the other hand effecting a bond between the plane networks constructed from these atoms. An increase in the nonlocalized proportion of valence electrons

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USSR

SAMSONOV, G. V., and KUNYTS'KYY, YU. A., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1048-1050

causes greater stabilization of the sp^2 configurations, as well as greater strength of the bond between the plane boride networks. It is suggested that Me-B and B-B bonds are of decisive significance in the formation of the properties of the diborides, rather than Me-Me bonds and the localization of electrons on these bonds.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USING NIOBIUM CARBIDE AS HEATERS FOR ELECTRIC RESISTANCE FURNACES -U-

AUTHOR-(05)-SAMSONOV, G.V., KINDYSHEVA, V.S., KISLYY, P.S., MALTSEVA, L.F., MARKER, E.N.

COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNOLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP 85-86

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UNCLASSIFIED

2/2 009 UNCLASSIFIED

CIRC ACCESSION NO--AP0123298 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDITIONS ARE DESCRIBED FOR PRODUCING HEATERS MADE FROM NIOBIUM CARBIDE DESIGNATED FOR OPERATION IN HIGH TEMPERATURE ELECTRIC RESISTANCE FURNACES, IN A PROTECTIVE ATMOSPHERE OR IN A VACUUM. PARTICULARS OF THE HEATERS PRODUCED ARE DESCRIBED. THE HEATERS ARE OF HIGHER DENSITY. IT IS SHOWN THAT NIOBIUM CARBIDE HEATERS CAN OPERATE CONTINUOUSLY WITHOUT SIGNIFICANT CHANGES IN THEIR CHEMICAL COMPOSITION OR STRUCTURE AT 2500-2600DEGREESC AND IN A 1 TIMES 10 PRIME NEGATIVE3 MINUS 1 TIMES 10 PRIME NEGATIVE4 MM HG FOR 300 HOURS.

UNCLASSIFIED

USSR

UDC 621.762:669-496

SAMSONOV, G. V., and VITRYANYUK, V. K.

"Production of Highly Porous Materials from the Carbides of Transition Metals"

Tugoplavk. karbidy [Refractory Carbides -- collection of works], Kiev, Nauk. dumka Press, 1970, pp. 51-57, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G455 by the authors)

Translation: Conditions are studied for production of materials with 68-74% porosity and satisfactory mechanical strength. The influence of the addition of prepared carbides, Zr powder, and particle size on the strength of the finished porous products is studied. 3 figures; 1 table; 9 biblio. refs.

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USSR

UDC: 537.533.2:669.01

SAMSONOV, G. V., OKHREMCHUK, L. N., UPADKHAYA, G. Sh., and NAUMENKO, V. Ya.

"Work Function of Titanium and Niobium Carbides in the Homogeneity Region"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 8, No. 4, 1970, pp 921-922

Abstract: This brief paper describes experiments performed on titanium and niobium monocarbides and undertakes to explain the basic expressions of the variations in their work function, along with the variations in their other physical characteristics such as electrical resistance, thermal conductivity, and the like. In this work the characteristics of the carbide phase electron structure were taken into account. The original specimens were in the form of cylinders 8 mm in diameter and 10 mm high. The work function was measured by using full current flow in a temperature interval of 1400-2100° K. The authors find that their results agree with those obtained in research on the thermoemission of Nb_2C.

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USSR

UDC 621.791.012

SAMSONOV, G. V., MUKHA, I. M., DOVBISHCHUK, M. N., and KAL'NENKO, B. I., Kiev

"The Effect of Heating by Glow Discharge on the Physico-Chemical Surface Condition of Solid Alloys"

Kishinev, Elektronnaya Obrabotka Materialov, No 5 (35), 1970, pp 32-38

Abstract: The effect of ionic heating on the physico-mechanical surface properties of solid alloys of the type VK (VK2, VK6, VK8, VK15, and VK20) and TK (T5K10, T15K6, and T30K4) and tungsten and titanium carbides during diffusion welding in a glow discharge is demonstrated. An analysis is presented of the variation of the chemical composition of surface layers as a function of the energy condition and the electron structure of the heated materials.

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USSR UDC: 621.362.2(088.8)

SAMSONOV, G. V., GORYACHEV, Yu. M., KUTSENOK, T. G., RADZIKOVSKAYA, S. V., TEL'NIKOV, Ye. Ya., Institute of Problems in the Science of Materials, Academy of Sciences of the UkrSSR

"A Thermoelectric Material Based on Cerium Sulfide"

USSR Author's Certificate No 251037, filed 28 May 68, published 22 Jan 70 (from RZh-Elektrotekhnika i Energetika, No 10, Oct 70, Abstract No 10A162 P)

Translation: A thermoelectric material based on N-type cerium sulfide is proposed. As a distinguishing feature of the patent, the thermoelectric figure of merit is improved by doping $CeS_{1.35-1.37}$ with 1-2 at.% Nb.

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USSR

UDC 546.27'171.1+546.621'171.1

PRIKHOD'KO, L.I., and SAMSONOV, G.V. (Kiev Polytechnic Institute)

"Effect of High-Temperature Annealing on the Properties of Boron and Aluminum Nitrides"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 7, No 2, 1971, pp 231-233

Abstract: A study was made of the effect of high-temperature annealing at 2000°C for 5 to 20 hours on boron nitrides and at 1900°C for 5 to 10 hours on aluminum nitrides. The raw BN powder was obtained by reduction of boron anhydride by carbon in a nitrogen atmosphere. AlN was obtained by nitriding aluminum powder. Chemical stability (interaction with water) before and after annealing, and the change in particles size after annealing were determined. Structural changes during heating were studied by the X-ray method and the results are presented in graphs. It is shown that powders, after annealing at 1600°C, weakly react with water, although a certain increase in particles size and in pycnometric density was observed in BN together with structure ordering. The annealing of BN at 2000°C leads to structure disordering, resulting in deteriorating properties.

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USSR

UDC 669.018.4:53

SAMSONOV, G. V., KUNITSKIY, YU. A., and KOSENKO, V. A., Institute of Problems of Material Science, Academy of Sciences UkrSSR

"Electric Resistance of Iron, Cobalt, and Nickel Borides"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 4, Apr 72, pp 884-887

Abstract: The temperature dependences of the electric resistance ρ of borides of metals of the iron family were experimentally investigated in the 20-1000°C temperature range. The initial materials for the synthesis of borides were powders of metals (99.95% purity) and boron (99.7% purity). The electric resistance was measured on 12-14 mm-long specimens 8 mm in diameter. The results, shown in diagrams of $\rho = f(T)$ for the boride phase systems Fe-B, Co-B, and Ni-B, are discussed from the viewpoints of structural and electronic formations of the systems. The effect of increased boron content on ρ, T, and the magnetic moment of iron and cobalt borides is compared with the character of $\rho = f(T)$-curves of nickel borides. One illustration, one table, nineteen bibliographic references.

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USSR

UDC 621.762

SAMSONOV, G. V., SERGEYEV, N. N., DZODZIYEV, G. T., VITRYANYUK, V. K., and LATYAYEVA, L. V.

"Cermet Hard Alloys Based on Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

Abstract: Conditions for obtaining TiC-Ni alloys and their possible use in cutting tools are investigated. The mixture for obtaining the alloys was prepared in a mill lined with hard alloys, in an ethyl alcohol medium. The ball size was 3-5 mm. To investigate the effect of grain size of initial powders on the structure and properties of TiC-Ni alloys, the ratio of ball weight to mixture weight was taken as 6:1, 10:1, and 15:1, and the grinding time was varied from 48 to 144 hours. Short bars 5 x 5 x 35 mm in size were pressed from the mixtures obtained in the different grinding regimes. The bars were sintered in two stages: first (preliminary) centering to remove decomposition products of the plasticizing agent and for final reduction of the oxides (in dried hydrogen at 700°), and the second (final) sintering -- in a vacuum of 5 10^{-3} mm Hg at different temperatures and isothermal exposure times. It was shown that satisfactory mechanical properties (flexural strength = 107-115 kg/cm^2, and hardness -- 90-90.5 Rockwell Hardness, A-Scale) are shown by the alloy 80% TiC - 20% Ni obtained from finely pulverized mixtures

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SAMSONOV, G. V., et al, Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

by sintering in a vacuum of 5 10^{-3} mm Hg at 1300° and with isothermal exposure time of 30 minutes. It was found that for a 6:1 ratio of ball weight to mixture weight, even for maximum grinding time (144), following sintering the alloys exhibit porosity up to 0.4% and do not meet the requirements specified. The experimental alloys surpass the alloy T14K8 as to wear resistance by a factor of 1.6-1.8 for cutting using steel 50 at a rate of 120-180 m/min, and when used to reinforce drawing plates for wire-drawing, the wear-resistance of these alloys is superior to that of the VK6 alloy by a factor of 1.5-2.

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USSR

UDC: 539.192

SAMSONOV, G. V., GORYACHEV, Yu. M., KOVENSKAYA, B. A., and TEL'NIKOV, Ye. Ya.

"Electron Spectrum and Physical Characteristics of Titanium, Vanadium, and Chromium Diborides"

Tomsk, Izvestiya VUZ--Fizika, No 6, 1972, pp 37-42

Abstract: An account is given of the theoretical computations of the electronic spectra for titanium, vanadium, and chromium diborides by the MOLKAO /expansion unknown/ method, otherwise known as the strong bonding method, which makes it possible to obtain a redistribution of the electrons from the shells of isolated atoms to the orbitals of solid compounds. The purpose of the computation is to obtain information regarding the relative contribution of the electronic states of the metal and the boron to the bonding energy and the physical characteristics of the boride and the redistribution of the electrons for a change in the number of the metal's d-electrons. It is noted that the results of the computations explain the basic laws for the formation of the physico-chemical characteristics of this type of compound. The authors are connected with the Institute of Material Behavior Problems, Ukrainian Academy of Sciences.

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USSR

UDC: 669.018

SAMSONOV, G. V., KOSENKO, V. A., RUD', B. M., and SIDOROVA, V. G.

"Some Characteristics of Palladium Boride"

Tomsk, Izvestiya VUZ--Fizika, No 6, 1972, pp 146-147

Abstract: Asserting that there is little data on the characteristics of the phases of Pd-B systems, the authors of this brief communication investigate the conditions for obtaining palladium borides by synthesizing the elements and measure the electrical resistivity and thermal emf in the 20-800° C range. The original material used for synthesizing the borides were amorphous boron with a purity of 99.6% and palladium powder 99.99% pure. It was established, by thermal, x-ray, metallographic, and chemical analyses, that the synthesis process for Pd_3B had to be done in a temperature interval of 700-900° for 5-6 hours, while the interval of 800-950° for 60-70 hours was required to synthesize Pd_5B_2. Curves are plotted for the resistivity of the Pd_3B and Pd_5B_2 phases and for the thermal emf of those phases as functions of the temperature. The authors are associated with the 50th Anniversary of the Great October Socialist Revolution Polytechnical Institute at Kiev.

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USSR UDC: 621.762

SAMSONOV, G. V., DZODZIYEV, G. T., KLYACHKO, L. I., VITRYANYUK, V. K., Kiev Polytechnical Institute, Uzbek Refractory and Heat Resistant Metal Combine

"Effect of Molybdenum on Properties of Metal Ceramic Hard TiC-Ni Alloys"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 57-60.

Abstract: A systematic study is performed of the effect of alloying TiC-Ni alloys with molybdenum over a broad concentration interval on their structure and physical-mechanical properties. It is established that the optimal properties are achieved with 20 vol. % Mo in the binder, the bending strength of the alloys varying between 105 and 180 kg/mm^2, depending on the total content of Mo, with hardnesses of from 92 to 85 HRA. As to wear resistance, the alloys with hardness with 92 HRA are two to three times superior to standard T15K6 alloy for cutting of type 50 steel.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202810007-9"

Composite Materials

USSR

UDC 537.29.669.01

SAMSONOV, G. V., VERKHOTUROV, A. D., and PETROVA, YE. N., Kiev

"Regularities of the Anode Erosion of Alloys of Carbides of Transition Metals with Iron, Cobalt, and Nickel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 140-144

Abstract: The problem of the bonding agent in developing composite materials based on brittle metal carbides of the fourth and fifth groups of the periodic table was experimentally investigated on specimens of alloys produced by a method of separate pressing and caking (Petrova, Ye. N., Dissertation Abstract, Institut Problem Materialovedeniya, Academy of Sciences, UkrSSR, 1970). The investigation results are discussed by reference to erosion and anodic transition coefficient dependences on the cubic content of the bonding agent and microstructures of steel U8 alloyed with different composite materials. It was found that the bonding of the investigated carbides with metal additions sharply decreases their erosion in comparison with pure carbides, but the transition coefficient increases from 6-7% to 70-80%. Carbides with bonding agent contents of up to 10-15% are recommended for practical use of composite materials. Nickel is recommended as the best bonding agent. Two illustrations, 10 bibliographic references.

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USSR

UDC 621.762:669.018.5(088.8)

SAMSONOV, G. V., DUBOVIK, T. V., KUTSENOK, T. G., KRYLOV, V. D., TIKHONOVA, V. F.

"Cermet Material"

USSR Author's Certificate No 309967, filed 24 Mar 70, published 29 Sep 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G420P)

Translation: A cermet material based on Al nitride is proposed for the manufacture of ignitron igniters of welding machines and converters. In order to decrease the ignition power and stabilize the electric parameters, 35-70% TiC is introduced into the material.

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USSR UDC 669.295.053.28

SAMSONOV, G. V., SINEL'NIKOVA, V. S.

"Aluminothermal Reduction of Titanium Oxides"

Metalloterm. Protsessy v Khimii i Metallurgii, [Metallothermal Processes in Chemistry and Metallurgy -- Collection of Works], Novosibirsk, Nauka Press, 1971, p 32-38. (Translated from Referativnyy Zhurnal Metallurgiya, No 3, 1972, Abstract No 3G154 by the authors).

Translation: Results are presented from a study of the conditions of production of Ti aluminides by reduction of Ti oxides with aluminum in a vacuum. Reduction of TiO_2 in a vacuum occurs by means of formation of TiO and Al_2O_3. At 975°, aluminides with the compositions TiAl and $TiAl_3$ are formed, both in the reduction of TiO_2 and in the reduction of TiO. At 1300° and higher, Al_2O_3 is reduced by aluminides and separated as Al_2O. The influence of the temperature, heating rate and excess Al content on the process of production of aluminides is studied. 3 figs; 11 biblio refs.

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USSR

UDC 541.45:621.984.5/.8

SANSONOV, G. V., PETRYKINA, R. Ya., and KOVAL'CHENKO, M. S., Institute of the Problems of Material Science, Academy of Sciences Ukrainian SSR

"Hot Pressing of Transition Metal Oxides"

Moscow, Neorganicheskiye Materialy, Vol 7, No 9, Sep 71, pp 1606-1611

Abstract: The caking principles in the hot pressing of oxides of transition metals TiO_2, ZrO_2, HfO_2, Cr_2O_3, and Nb_2O_5 were experimentally investigated. In order to get conditions which are close to the ideal case of isothermal and isobaric caking, which is necessary for rating the curves of density depending on the caking time by hot pressing, the mold with the powder was heated up to the nominal temperature of hot pressing without loading and then the loading was applied instantaneously. From determined values of the shear ductility, depending on temperature and caking stages by hot pressing, the activation energies of caking by hot pressing (90 and 130 kg/cm^2) of oxides were derived. The investigation results are discussed by reference to diagrams showing the relative densities of investigated transition metals as function of the caking time, the character of

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SAMSONOV, G. V., et al., Neorganicheskiye Materialy, Vol 7, No 9, Sep 71, pp 1606-1611

the activation energy of the caking process, and the shear ductility depending on the caking time by hot pressing of ZrO_2. The caking activation energy by hot pressing was found to be determined mainly by that energy which is required for the activation of transition metals. Seven illustr., four tables, 16 biblio. refs.

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USSR

UDC 669.721.9

SAMSONOV, G. V., PERMINOV, V. P.

"Magnesium-Thermal Techniques"

Magniyetermiya [English version above], Moscow, 1971, 174 pages.

FOREWORD: Metal-thermic processes and methods are being ever more broadly used in metallurgy and chemistry, particularly in connection with the development of the production of refractory metals and alloys, various metallic compounds and ferroalloys. Together with the most widely developed aluminum-thermal techniques, calcium-thermal, silicon-thermal, boron-thermal and magnesium-thermal methods are becoming more widely used. Magnesium-thermal methods form the subject of this book. Magnesium-thermal techniques have been particularly widely developed in connection with the organization of industrial magnesium-thermal production of titanium, niobium, other light and refractory metals, as well as compounds such as nitrides, boron carbide, certain borides and silicides. The simultaneous expansion of the production capacity for magnesium, its high reducing activity, the absence of compounds of magnesium with many metals or the formation of unstable compounds which

USSR UDC 669.721.9

SAMSONOV, G. V., PERMINOV, V. P., Magniyetermiya, Moscow, 1971, 174 pages.

lose magnesium relatively easily at high temperatures, have resulted in particularly rapid expansion of the magnesium-thermal method in inorganic synthesis and in production.

At the same time, magnesium-thermal techniques allow the synthesis of many compounds of magnesium with metals and nonmetals which have important physical-technical and chemical properties, of use in various branches of new technology.

In spite of the broad popularity and continuous development of the magnesium-thermal method, no summarizing works have yet been written; the information available is spread through many sources. Furthermore, the theoretical principles of magnesium-thermal reduction have been insufficiently developed, making familiarization with them and further development difficult.

The authors have attempted to fill this gap to some extent and systematize the available information on the theoretical principles and applications of magnesium-thermal techniques, using the experience which they have accumulated and information on the metal-chemical properties of magnesium, as manifested in its compounds.

In spite of the unavoidable shortcomings of this review, the authors hope that the book will be useful to metallurgists and chemists and will influence further works in the area of metallothermy.

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UDC 669.721.9

SAMSONOV, G. V., PERMINOV, V. P., Magniyetermiya, Moscow, 1971, 174 pages.

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SAMSONOV, G. V., PERMINOV, V. P., Magniyetermiya, Moscow, 1971, 174 pages.

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USSR

UDC 669.721.9

SAMSONOV, G. V., PERMINOV, V. P., Magniyetermiya, Moscow, 1971, 174 pages.

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USSR

UDC 537.311/312:661.55

SAMSONOV, G. V., and SHVEDOVA, L. K.

"Electro-Physical Properties of Nitrides of Transition Metals"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 10, Oct 71, pp 1597-1601

Abstract: Nitrides of transition metals are at present studied intensively because of their valuable intrinsic properties such as electric and thermal conductivities, high melting points transition into super-conductivity, and high rigidity. They are also of interest because their study leads toward further clarification of the nature of chemical bonds and electronic structure of these compounds.

In the present work, nitrides of titanium, zirconium, hafnium, vanadium, niobium, and tantalum were studied for their resistivity as a function of temperature and for their electric resistivity, Hall coefficient, and magnetic susceptibility as a function of concentration. Resistivity and thermal e.m.f. were measured by the compensation method, and all measurements were normalized according to various accepted conventions. Samples, prepared by means of hot pressing, were X-ray tested for homogeneity and purity of crystalline structure.

While in the homogeneous regions all these properties changed smoothly and irregularities with the deviation of the sample material from the

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USSR

SAMSONOV, G. V., and SHVEDOVA, L. K., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 10, Oct 71, pp 1597-1601

stoichiometric structure were observed. Thus, resistivity increased because of additional absorption of electrons by the holes in the nitrogen sub-lattice. Resistivity also appeared to be higher for the nitrides of transition metals of Group V of the periodic table as compared to those of Group IV. Thermal e.m.f. was negative for all tested nitrides, with a nearly linear dependence on temperature. Negative e.m.f. and Hall effect were accepted as proof that electric conduction was predominantly electronic. Carrier mobility was computed, and it was higher for nitrides of Group V. It was found that carrier mobility decreased with greater deviation from stoichiometry because of the greater number of holes in the nitrogen sub-lattice.

Dependence of magnetic susceptibility on concentration showed that all nitrides are paramagnetic. It was also observed that susceptibility increased with deviation from stoichiometry. As it is known that the measured susceptibility is the sum of diamagnetic and paramagnetic components, a joint investigation of the electronic specific heat and of the magnetic susceptibility permitted computing by the authors of the fraction of the paramagnetic part in the measured magnetic susceptibility.

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USSR

UDC 621.387.233

SAMSONOV, G.V., BULOVIK, T.V., KUTSENOK, T.G., TIKHONOVA, V.F., ANTONKIN, R.G. [In-t problem materialovedeniya AN SSSR--Institute Of The Problems Of Material Study, AS, USSR]

"Material For Production Of Semiconductor Igniters For Ionic Rectifiers"

USSR Author's Certificate No 274240, filed 9 June 69, published 24 Sept 70 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3A185)

Translation: Igniters for ionic rectifiers [ventil'], produced from a material, in the composition of which boron nitride and boron carbide enter, have a high ignition power and unstable parameters of current and voltage in the operating procedure. With the object of an increase of the stability of the parameters and a decrease of the ignition power, it is proposed to introduce niobium oxide into the material of the igniters, while the components mentioned above are taken in the following percentage ratio: boron nitride, 40-60; boron carbide, 20-40; and niobium oxide, 10-30. The method of manufacturing the igniters from the proposed materials involves hot pressing of a mixture of boron carbide, boron nitride, and niobium oxide powders in graphite molds at T = 1900--2000° C, pressure 20 kg/cm^2, and exposure time 2 min. The characteristics of the igniters are presented. V.K.

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USSR UDC 541.11

PASECHNIK, V. A., SAMSONOV, G. V., and YEL'KIN, G. E., Institute of High Molecular Compounds, Leningrad, Academy of Sciences USSR

"Thermodynamic Study of Ion-Exchange Equilibrium With Consideration for Solvation in the Ion-Exchange Resin"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 4, Apr 70, pp 1065-1070

Abstract: A thermodynamic equation has been derived to correlate the constant of ion-exchange equilibrium and the difference of free swelling energy of ion-exchange resins in monoionic forms. The method proposed for analyzing the relation between the selectivity and swelling capacity of ionites is based on a new selection of standard states provided by dehydrated monoionic forms of ion-exchange resins. Use is made of a hypothetical model the admissibility of which for describing real systems may be questionable. The method fails to consider the totality of solvation effects in the exchange resin.

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Acc. Nr: AP0036526 S Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 37-40

EFFECT OF ASSOCIATION ON THE ORGANIC IONS EXCHANGE

L. V. Dmitrenko, A. Sh. Oenedi, G. V. Samsonov

Summary

The sorption of an organic ion-oxytetracycline (OTC) by polysulfostyrene cationites has been studied. The selectivity coefficient of sorption rises with increasing ionic strength of the solution, and the diffusion coefficient decreases both with increasing ionic strength and with rising OTC concentration in external solution. Under certain conditions-for ionite with low swelling ability or with large ionic strength-the sorption isotherms of OTC do not show saturation, but pass through a maximum. The results are discussed in terms of the formation of associates in the ionite phase and in the solution.

D.M.

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REEL/FRAME
19721374

7

1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MODERN PROBLEMS OF THE PHYSICOCHEMICAL TECHNOLOGY OF DRUGS -U-

AUTHOR--SAMSONOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. FARM. ZH. 1970, 4(4), 48-54

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DRUG PRODUCTION, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0255 STEP NO--UR/0450/70/004/004/0048/0054

CIRC ACCESSION NO--AP0120945

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MODERN DRUG PRODUCTION IS DESCRIBED AS A COMBINATION OF (A) CHEM. SYNTHESIS, (B) BIOCHEM. METHODS AND (C) PHYSICOCHEM. TECHNOLOGY AIMED AT THE SEPN. AND PURIFICATION OF BIOL. ACTIVE COMPDS. A REVIEW WITH 9 REFS. FACILITY: INST. VYSOKOMOL, SOEDIN., LENINGRAD, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THERMODYNAMIC FUNCTIONS OF THE SORPTION PROCESS OF CHLOROTETRACYCLINE ON SULFOCATIONITE SBS -U-

AUTHOR-(03)-SAMSONOV, G.V., VOROBYEVA, V.YA., KRAVETS, M.V.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 427-429

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SORPTION, ENTROPY, ION EXCHANGE RESIN, ANTIBIOTIC, TETRACYLINE, CHLORINATED ORGANIC COMPOUND/(U)IONITE ION EXCHANGE RESIN, (U)SBS SULFOCATIONITE EXCHANGE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2146 STEP NO--UR/0069/70/032/003/0427/0429

CIRC ACCESSION NO--AP0125729

UNCLASSIFIED

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0125729 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SELECTIVE ADSORPTION OF CHLOROTETRACYCLINE BY IONITE IS DETERMINED BY INCREASE IN THE ENTROPY OF THE SYSTEM. DURING ADSURPTION OF THE IONS OF THIS ANTIBIOTIC THE ION EXCHANGE CONSTANT INCREASES WITH INCREASING TEMPERATURE AND THE SWELLING COEFFICIENT OF THE SORBENT. THIS CAN BE PROBABLY ACCOUNTED FOR BY THE LOW ENERGY OF ADDITIONAL INTERACTION OF CHLOROTETRACYCLINE WITH THE SORBENT. FACILITY: KHIMIKO-FARMATSEVTICHESKIY INSTITUT, LENINGRAD.

UNCLASSIFIED

USSR

MOROZOV, V. M., ET AL., Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 387-399

of the stability of steady-state movements of complex systems, and the conditions of stability of the movement of a solid-state with liquid and elastic parts in different force fields are discussed.

Thus, the investigation includes complex systems constrained by holonomic relations, movement of a solid-state having a cavity partially filled with a liquid of density ρ the surface tension of which is negligible around a stationary point O, the construction of a complete picture of the distribution of the positions of equilibrium of a complex system, their evolution and bifurcation on variation of the system parameters, the problem of stability of uniform vertical rotation around a stationary point of a solid-state with a thin, rectilinear, nonextensible elastic rod in a uniform field of gravitational force rigidly fastened to it, and the movement of a solid-state in a central newtonian force field bearing thin or thin-walled inextensible elastic rods each of which has 2 planes of symmetry.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--INCREASING THE DURABILITY OF DRILLS MADE FROM HIGH SPEED GRADES OF STEEL -U-

AUTHOR--SAMSONOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW. VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 65-67

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--HIGH SPEED STEEL, CORUNDUM, DRILLING MACHINE, BORON NITRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1871 STEP NO--UR/0122/70/000/002/0065/0067

CIRC ACCESSION NO--AP0130698

UNCLASSIFIED

UNCLASSIFIED

2/2 018 PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130698

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR PRESENTS THE RESULTS FROM A COMPARATIVE STUDY OF THE STABILITY OF TWIST DRILLS MADE FROM NEW GRADES OF HIGH SPEED STEEL. THE DRILLS WERE GROUND WITH ARTIFICIAL CORUNDUM AND CUBIC BORON NITRIDE. THE USE OF CUBIC BORON NITRIDE DISCS FOR GRINDING DRILLS INCREASES DRILL DURABILITY OVER THE ENTIRE RANGE OF CUTTING SPEEDS AND FOR ALL GRADES OF HIGH SPEED STEEL STUDIED.

UNCLASSIFIED

Acc. Nr: AP0038646 Abstracting Service: CHEMICAL ABST. 3/70 Ref. Code: UR 0072

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58581t Contactless measurement of the temperature of a sheet slag glass-ceramic. Kocho, V. S.; Egorov, V. K.; Samsonov, V. A.; Byalik, A. A. (Kiev. Politekh. Inst., Kiev, USSR). *Steklo Keram.* 1969, 30(12), 16–17 (Russ). The temp. of sheet slag glass-ceramic was measured (error <±8–10°) with a radiation pyrometer placed in a stainless steel tuyere water cooled. The tuyere was placed 100–250 mm from the measured surface, and the temp. of the case of the pyrometer was <43° for a working temp. of 950° with the use of 2250 l. water/hr. The measuring errors were decreased by placing the pyrometer into a special vessel water cooled, which decreased to 30–5° the temp. of the telescope. Abram Chertkoff

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REEL/FRAME
19731825

AA0040644

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UR 0482

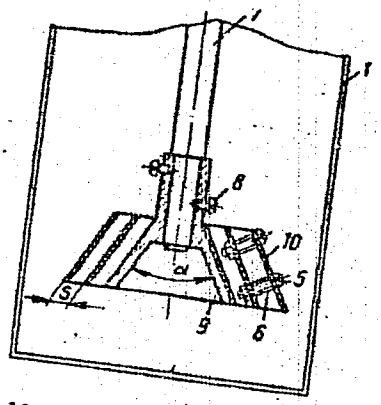
Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

242139 SCREW MIXER FOR RESINS for effective mixing of non-Newtonian liquids e.g. epoxys, polyesters under laminar flow conditions the mixing unit is of the Archimedean screw type, with a rectangular or conical cross-section. The blade, of thin sheet steel, bolted to a bush connected to a central shaft, can be made of varying pitch and conicity, and has an optimum speed of 70-150 r.p.m.

AUTHORS: Timofeyev, V. A.; Samsonov, V. G.; and Purtov, I. V.

19750220

AA0040644



3.5.67. as 1155793/23-26, TIMOFEEV, V.A. et al. (11.9.69) Bul. 15/25.4.69. Class 12e, Int. Cl. B 01f.

19750221

USSR

UDC 621.438

[redacted], V. L., Engineer

"Selection of the Heat Exchange Surface of Gas-Turbine-Engine Air Coolers With an Intermediate Heat Carrier"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 5, 1972, pp 106-109

Abstract: On the basis of comparison of the thermohydraulic indicators of a number of heat exchange surfaces, in the channels of which heat transfer is intensified, there is shown the superiority of a surface with a flat ribbed tube. An experimental function Nu = f(Re) is presented for a channel with sharp turns, constrictions, and widenings in the Reynolds number range of Re = 550 - 1650. This relationship is suitable for use not only in designing the heat exchange surfaces of gas-turbine-engine air coolers, but also in designing heat exchangers of other types. 3 figures. 6 references.

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USSR

UDC 661.665.1

SAMSONOV, V. P., RAUTBORT, A. YE., VAL'YANO, G. YE., SEREBRENNIKOVA, V. YE., and PROKHOROVA, I. V., Institute of High Temperatures, Academy of Sciences USSR

"Filamentary Crystals in SiC-Base Ceramics Containing Chromium and Titanium"

Moscow, Neorganicheskiye Materialy, No 3, Mar 73, pp 492-493

Abstract: The structural features of filamentary crystals formed in SiC-base ceramics containing Cr and Ti were examined by x-ray diffraction and electron microscopy. The thickness of filamentary crystals fluctuated between 40 Å and 1000 Å, filaments 300-360 Å wide were most often encountered and, in many cases, their length exceeded 4 Å (their exact length could not be determined). In certain cases the crystal did not fully adhere to the basic phase but was found in the channel. Calculations based on measurements of channel and filament width showed that the difference between channel and filament radii is significantly greater than the minimum dimension (24 Å). This verifies that some filamentary crystals can be found in channels. On the basis of analysis of calculations from microdiffraction photographs, it was possible to identify the filaments as single crystals. Diffraction pictures obtained for ceramics

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USSR

SAMSONOV, V. P., et al., Neorganicheskiye Materialy, No 3, Mar 73, pp 492-493

with Cr and Ti were analogous. Indicated differences obtained in this work of filamentary single crystals α-Si_3N_4 from earlier known filaments makes it possible to hypothesize that the first ones are formed by a different method than the second which, strictly speaking, cannot be called filaments. Six bibiliographic references.

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USSR

UDC: [621.436:656].001.8

BAYKOV, B. P., SOKOLOV, V. S., SAMSONOV, Ye. P., KOSYAK, A. F., and BORDUKOV, V. T.

"Promising Developments in Trunk Diesels for Railroad, Marine, and Heavy Truck Transportation"

Moscow, Izvestiya Akademii Nauk SSSR--Energetika i Transport, No. 4, 1971, pp 93-98

Abstract: In this qualitative analysis of improvements that could be made in diesels for transport, the authors point out that technical progress in this area requires improvement in aggregate power, economy, and reliability, with limited indices of weight and dimensions. The cylindrical power of diesels for a specified rpm is determined by the average effective pressure, the velocity of the piston, and the diameter of the cylinder. The need for improving the aggregate power has recently resulted in the appearance of V-shaped multicylinder models. For increased rpm, above 1500, a large number of V-shaped diesels of 6, 8, and 12 cylinders have been developed. The TsNIDI (Central Scientific Research Diesel

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UDC: [621.436:656].001.8

BAYKOV, B. P., et al, Izvestiya Akademii Nauk SSSR--Energetika i Transport, No. 4, 1971, pp 93-98

Institute) as well as several other organizations have conducted research in improving the pickup and adaptability of diesels, and work on the experimental 6ChN 15/18 engine with controllable turbo-compression has yielded a torque reserve of more than 1.8. At the present time, an urgent need has arisen for the manufacture of new trunk diesels with an aggregate power of up to 2500 effective horse power at 2000-2200 rpm for truck transportation, with an aggregate power of up to 8000 ehp at 1500 rpm for locomotive engines, and with an aggregate power of up to 25,000 to 30,000 ehp at 420-450 rpm for shipbuilding. This should be achieved in the next five-year plan, 1971-1975, for diesels. The diagram of projected diesel parameter values for the period of 1975-1980 is plotted.

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UNCLASSIFIED

TITLE--STRENGTH OF NUCLEAR SHIP REACTORS -U- PROCESSING DATE--09OCT70

AUTHOR--SAMSONOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--(PROCHNOST' SUDOVYKH YADERNYKH REAKTOROV) LENINGRAD, SUDOSTROYENIYE, 1970, 260 PP

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--NUCLEAR POWERED SHIP, PRESSURE VESSEL, STRESS LOAD, STRESS ANALYSIS, MECHANICAL STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1977/1807 STEP NO--UR/0000/70/000/000/0001/0260

CIRC ACCESSION NO--AM0044944

UNCLASSIFIED

2/2 030 UNCLASSIFIED

CIRC ACCESSION NO--AM0044944 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. INTRODUCTION 5. CHAPTER I BASIC TYPES OF SHIP REACTORS 7. II EXTERNAL FORCES EFFECTING THE VESSEL OF A SHIP REACTOR 15. III DETERMINATION OF STRESSED CONDITIONS IN ELEMENTS OF A SHIP REACTOR VESSEL 31. IV STANDARDIZATION OF STRENGTH OF A REACTOR VESSEL 154. APPENDIX 247. BIBLIOGRAPHY 260. THE BOOK DEALS WITH CALCULATIONS OF STRENGTH OF VESSELS OF NUCLEAR SHIP REACTORS TAKING INTO ACCOUNT THE SPECIFIC FEATURES OF THEIR OPERATION ON SHIPS... THE BOOK WAS WRITTEN FOR ENGINEERING TECHNICAL PERSONNEL OF DESIGN OFFICES AND SCIENTIFIC RESEARCH INSTITUTES. IT CAN BE USEFUL ALSO TO EMPLOYEES OF HIGHER EDUCATIONAL INSTITUTIONS AND STUDENTS...

UNCLASSIFIED

USSR UDC 669.15'24'295

GORBACH, V. G., KOKORIN, V. V., SANSONOV, YU. I., and CHUISTOV, F. V.

"Precipitation by Stacking Faults in an Fe-Ni-Ti Alloy"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 147-150

Abstract: An Fe-Ni-Ti alloy was selected to investigate stacking fault precipitation. This alloy had the following chemical composition (in wt %): 29.7 Ni, 3.82 Ti, 0.018 C, balance-Fe. The alloy was prepared in an induction furnace, homogenized at 1150°C for eight hours, and then forged (at 1150°C) to an 11 x 11-mm cross section. The produced rods were cut into samples approximately 1 mm and heat treated at different temperatures or in a vacuum or in salt baths and then quenched in water after heating at 1150°C for two hours.

Test results showed that in the aged austenite of the Fe+30 Ni+4 Ti alloy there are helicoidal dislocations and stacking faults of a vacancy nature. Diffraction contrast analysis revealed that the stacking faults were of the subtraction type. Also a new mechanism of precipitation (heterogeneous precipitation by stacking faults) was detected for the Fe-Ni-Ti alloy and it was assumed that the equilibrium η-phase (Ni_3Ti) is the precipitation phase in the given case. Three figures, 16 bibliographic references.

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USSR UDC 615.385.1

VINOGRAD-FINKEL', F. R., Prof, TERENT'YEVA, E. I., Prof, SUKHOVA, A. G., VOROB'YEVA, G. S., TAL'SKAYA, I. N., LIFLYANDSKIY, D. B., DOROFEYEVA, T. N., and SAMSONOVA, N. N., Central Institute of Hematology and Blood Transfusion (Prof A. Ye. Kiselev, Director), Ministry of Health USSR and Institute of Cardiovascular Surgery (Prof V. I. Burakovskiy, Director), Academy of Medical Sciences USSR (Moscow)

"Morphological and Biochemical Characteristics and Viability of Washed Erythrocytes Intended for Surgical Procedures With Extracorporeal Circulation"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 3-7

Abstract: Erythrocytes were obtained after separation of plasma from donor blood which had been kept in storage for 24 hours, washed with physiological solution, and examined by the electron microscope method; unwashed erthrocytes from the same blood served as controls. After two washings the submicroscopic organization of cells in the washed erythrocytes did not differ essentially from that in the unwashed erythrocytes. The conclusion 1/2

USSR

VINOGRAD-FINKEL', F. R., et al., Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 3-7

was that washing the erythrocytes from blood prepared with a glucose-citrate preservative and stored for one day has no significant effect on the ultrastructure of almost the entire mass. Investigation of phosphorus fractions demonstrated the metabolic integrity of the washed erythrocytes through one or two washings. Thus, washing with physiological saline solution does not alter the structural completeness, metabolic activity, or biological value of erythrocytes. None of their indexes differ from those of erythrocytes of whole blood stored for 1 day and used for extra-corporeal circulation in cardiac surgery; they should therefore be recommended as the basic component in perfusates for extracorporeal circulation.

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--19,NORSTEROIDS. PREPARATION OF 5 ALPHA,HALO,6 BETA,19, OXIDOANDROSTAN,3 BETA,OL,17,ONE ACETATES -U-

AUTHOR-(04)-SAMSONOVA, N.V., MOROZOVA, L.S., LURI, F.A., MAKSIMOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(2), 5-10

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ACETATE, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0490 STEP NO--UR/0450/70/004/002/0005/0010

CIRC ACCESSION NO--AP0121164

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121164

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I WERE CONVERTED INTO II. THUS, 1 G I, 1.6 G PB(OAC) SUB4, AND 0.23-0.26 G IODINE WAS REFLUXED IN 30 ML C SUB6 H SUB6 WITH IRRADN. (100-500 W LAMP) 45-60 MIN TO GIVE A PRODUCT 188-190DEGREES IN IS LARGER THAN 80PERCENT YIELD. BEST YIELDS (90PERCENT) WERE OBTAINED WHEN CCL SUB4 WAS USED INSTEAD OF C SUB6 H SUB6. THE REACTION COULD BE DONE WITHOUT ANY IRRADIATION IN CCL SUB4 (RATIO I-CCL SUB4 EQUALS 1:100) THE YIELDS BEING 70PERCENT. WHEN ALPHA,ALPHA PRIME, AZOBISISOBUTYRONITRILE WAS USED AS A CATALYST, YIELDS OF II WERE 70PERCENT. FACILITY: VSES. NAUCH.-ISSLED. KHIM.-FARM. INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--FUNCTIONAL CHARACTERISTICS OF UNITS IN THE PRIMARY VISUAL CORTEX OF CATS -U-

AUTHOR--MKRTYCHEVA, L.M., SAMSONOVA, V.G.

COUNTRY OF INFO--USSR

SOURCE--NEYROFIZIOLOGIYA, 1970, VOL 2, NR 2, PP 173-179

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBRAL CORTEX, VISION, CAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0238 STEP NO--UR/0660/70/002/002/0173/0179

CIRC ACCESSION NO--AP0102291

UNCLASSIFIED

2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AP0102291 PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUANTITATIVE CHARACTERISTICS OF THE OUTPUT SIGNALS WERE OBTAINED FOR 80 UNITS IN THE PRIMARY VISUAL CORTEX OF RELAXED CATS BY MEANS OF EXTRACELLULAR RECORDS OF THEIR SPIKE ACTIVITY. THE AMOUNTS OF PHOTIC ENERGY ELICITING THRESHOLD RESPONSES TO FLASHES (FROM 100 MU SEC TO I SEC) IN VARIOUS NEURONES DIFFER BY 7 LOG. UNITS. THE UNITS DISTRIBUTION CURVE FOR THRESHOLD VALUES POSSESSES ONE MAXIMUM WITHIN THE ENERGY RANGE FROM I TO 10 LM TIMES SEC. THE UNITS RECORDED ARE ABLE TO SUMMATE THE EXCITATION ON THE AVERAGE UP TO 34 MSEC. BY THEIR RESPONSE LATENCIES THE CELLS FALL INTO THREE GROUPS. THE FIRST ONE REACTS AFTER 20-40 MSEC, THE SECOND, AFTER 100-120 MSEC, THE THIRD, AFTER 160-180 MSEC FROM THE BEGINNING OF THE STIMULATION. THE PHOTIC STIMULATION CONSIDERABLY CHANGES THE PROPORTION OF UNITS DISCHARGING WITH HIGH AND WITH LOW FREQUENCY. NO CORRELATION HAS BEEN FOUND BETWEEN THE PHOTIC SENSITIVITY OF THE UNITS, THE LATENCIES OF THEIR RESPONSES AND THE CRITICAL TIME OF SUMMATION. THE TESTIFIES TO THE PRESENCE OF A GREAT NUMBER OF VISUAL CORTICAL UNITS WHICH ARE SIMILAR ONLY BY ONE OF THE FUNCTIONAL CHARACTERISTICS OF THEIR OUTPUT SIGNAL.

UNCLASSIFIED

USSR

KARTUSHINA, L. I., ROZHKOVA, A. M., DAVRONOVA, A. M., SIMSONOVA, Z. F., and YAKUBOVA, M. YA., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases, and Bacteriological Department, Children's Railroad Hospital No 3, Tashkent

"A Placenta and Yeast Hydrolysate as the Basis for a Nutrient Medium for Growing Pathogenic Microbes"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 81-83

Abstract: Numerous substitutes for nutrient materials also include placental fluid hydrolyzed with yeast. In this investigation, we determined the feasibility of using placental tissue as nutrient material, by hydrolyzing it with brewer's yeast. A mixture of 1 kg of ground placenta 2 l of brewer's yeast, and 2 l of tap water was kept at 50° C for 6 days, with periodic stirring. Then, the supernatant fluid was decanted. This placenta and yeast hydrolysate, with a high amine nitrogen (400-420 mg%) and peptone (2.3-2.5%) content, was inactivated at 80° C. To prepare nutrient media, the hydrolysate was appropriately diluted, the pH was adjusted, and wither salt or glucose was added. Control media were made from the

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USSR

KARTUSHINA, L. I., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 81-83

Khottinger's broth. Various strains of Shigella, Salmonella, Escherichia, and Staphylococcus were cultured in sugar media, totaling 225 cultures. In 24 hours, the yields from the experimental and control cultures were equal. Salt media were used as elective nutrients to isolate Staphylococci from feces and vomitus of patients with acute gastrointestinal disorders. Sixty-five parallel tests were carried out. In 24 cases, the Staphylococci were simultaneously isolated from the experimental and the control cultures. This indicates that salt-containing nutrient media made from a placenta and yeast broth have elective properties matching those of media made from the Khottinger's broth.

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

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242846 GAS SCRUBBER of increased capacity with elimination of carry-over of liquid. The gas is purified as it flows across the scrubber through zig-zag channels formed by aligned angle-plates. The liquid separated through inertia collects in the bottoms of the angle plates and flows out of the base of the scrubber under its own weight while the gas leaves through the side of the scrubber.
13.9.67. as 1185087/23-26. SAMSONOVICH, V.A.
(22.9.69) Bul. 16/5.5.69. Class 12a Int. Cl. B 01d.

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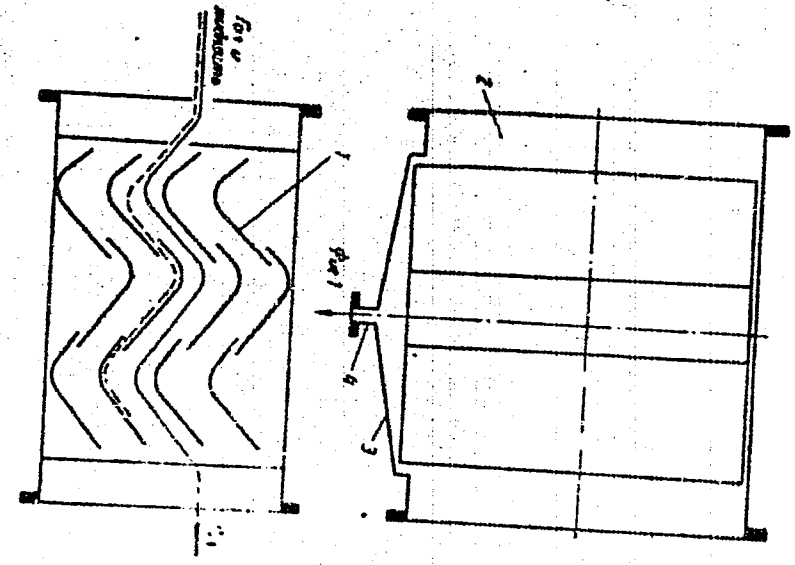
19790430

AA0047005



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19790431

Biophysics

USSR

UDC 581.112

SAMUILOV, F. D., NIKIFOROV, YE. A., and NIKIFOROVA, V. I., Kazan Agricultural Institute imeni M. Gor'kiy and Kazan Pedagogical Institute

"Nuclear Spin Echo Study of the State of Water in Plant Tissues"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 3, Jan 71, pp 723-726

Abstract: The spin-lattice relaxation of water protons in corn plant tissues was determined and found to differ in various parts of the plant. T_1 is greater in the roots than in the leaves. This indicates greater mobility of water in the roots and can be attributed to hydration of the root tissues. The highest values of T_1 are observed in the conduction zone of the roots (3-4 mm thick) and in the stalks containing essentially free (transported) water. In the small roots two relaxation time T_1 are determined: the larger value corresponds to the free water fraction and the smaller value, to the bound water. To characterize the state of the water in the root cells of the absorbing zone, the relaxation times T_1 were determined under three different moisture conditions. By reducing the moisture content of the cells in the dry period, the relaxation time T_{1L} (corresponding to the

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202810007-9"

SAMUILOV, F. D., et al., Doklady Akademii Nauk SSSR, Vol 196, No 3, Jan 71, pp 723-726

fraction of free water) is shortened; this indicates decreased mobility of the water. The relaxation time T_{1S} (corresponding to the bound water) is somewhat enhanced. This is in agreement with the change in the contents of free and bound water in cells. Under the effect of the dryness, the free water content is reduced and the amount of bound water is correspondingly increased. When the plant roots are flooded with water, the fraction of bound water increases, and this may be due to intensification of hydrolytic processes in the cells under the influence of anaerobiosis. Free water content in the root cells is reduced. Nevertheless, the relaxation time corresponding to the free water is lengthened. This corresponds to an increase in the mobility of free water and may be caused by structural disturbances in the cells as a result of anaerobiosis during flooding of the roots.

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Biochemistry

USSR

RUBIN, A. B., and SAMUILOV, V. D.

"The First All-Union Symposium on Problems in Biophotochemistry"

Moscow, Uspekhi Sovremennoy Biologii, Vol 71, No 1, 1971, pp 151-158

Abstract: The First All-Union Symposium on Problems in Biophotochemistry took place in Moscow in June 1970. It was organized by the USSR Ministry of Higher and Secondary Special Education, the Moscow State University Interdepartmental Coordination Council on Problems in Biophotonics, and the Moscow Society of Naturalists. The basic topic of the symposium was excitation states and electron transfer in photosynthesis and in photochemical processes. Papers of a descriptive and synopsis nature were presented on the following basic problems: energy migration mechanisms; migration of the energy of electron excitation states over pigment compounds during photosynthesis; photochemical reaction centers; energy transformation mechanisms; electron transfer and associated processes during photosynthesis and in

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RUBIN, A. B., and SAMUILOV, V. D., Uspekhi Sovremennoy Biologii, Vol 71, No 1, 1971, pp 151-158

photochemical systems; and photochemical processes during laser excitation. The discussion that followed the presentations enabled the scientists to outline the basic trends and growth prospects in biophotochemical research. It was also a good opportunity to revive old and establish new contacts among the various institutions.

2/2

USSR

UDC 615.22:547.785.5

KOCHERGIN, P. M., LINENKO, V. I., TKACHENKO, A. A., SAMURA, B. A., POVSTYANOY, M. V.: All-Union Scientific-Research Economico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow, and Zaporozh'ye Medical Institute

"Studies of the Imidazole Series. LIII. Synthesis and Pharmacological Action of Derivatives of Imidazo(1,2-f)Xanthine"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 2, Feb 71, Vol 5, pp 22-26

Abstract: Certain 7-acylmethyl-8-chloro(bromo)theophyllenes react with primary and secondary amines to form 7-acylmethyl-8-alkylamino (erylamino, dialkylamino)theophyllenes; the corresponding hydrazones were obtained from the latter, they are of interest because of their tuberculostatic properties. Also synthesized were a series of 7-acylalkyl-8-bromotheophyllines not previously described in the literature, and various derivatives of 1 H-imidazo(1,2-f) xanthine. Fifty-five compounds were studied.

The derivatives of 1 H-imidazo(1,2-f)xanthine were found to affect

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KOCHERGIN, P. M., et al, Khimiko-Farmatsevticheskiy Zhurnal, No 2, Feb 71, Vol 5, pp 22-26

the cardiovascular system (Preparation 3 depresses heart action in frogs, rabbits and cats; Preparations 1 and 2 increased contraction amplitude in excized frog hearts). Preparations 1 and 2 increased arterial pressure in rabbits, among other effects.

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USSR

UDC 542.91:547.1'118

IVANOV, B. Ye., SAMURINA, S. V., LEBEDEVA, N. N., AGEYEVA, A. B., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry, imeni A. Ye. Arbuzov, Academy of Sciences, USSR

"Reaction of o-Hydroxybenzyl Alcohol With Phosphorous Acid Esteramides and Amides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 73, pp 1825-1827

Abstract: The reaction of o-hydroxybenzyl alcohol with diethylamidodiethylphosphite, bis(diethylamido)ethyl phosphite and tris(diethylamido) phosphite was studied. It was established that in the nucleophilic substitution reactions, the nucleophilic center may be at the phosphorus atom or at the nitrogen atom in phosphorous acid esteramides and amides.

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1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SYNTHESIS OF TIN AND GERMANIUM TETRAACYLATES -U-

AUTHOR-(03)-MELNICHENKO, L.S., ZEHLYANSKIY, N.N., SAMURSKAYA, K.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 351-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOTIN COMPOUND, TIN COMPOUND, ACYL RADICAL, ORGANOGERMANIUM COMPOUND, GERMANIUM COMPOUND, ORGANOMERCURY COMPOUND, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1556 STEP NO--UR/0020/70/190/002/0351/0353

CIRC ACCESSION NO--AT0116964

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0116964

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 58.56 G SNBR SUB4 TO 95 G BU SUB2 SN (OAC)SUB2 IN ET SUB2 O GAVE 91.2PERCENT SN(OAC)SUB4, M. 238-9DEGREES. THE YIELD WAS 80PERCENT IN REFLUXING HEXANE; IT WAS 90PERCENT FROM SNI SUB4 AND BU SUB2 SN(OAC)SUB2 IN HOT HEXANE. SIMILARLY WAS PREPD. 72.9PERCENT SN(O SUB2 CET)SUB4, M. 134-5DEGREES. BU SUB2 SN(OAC)SUB4 AND GEBR SUB4 GAVE 96.9PERCENT GE(OAC)SUB4, M. 155-6DEGREES. GE(O SUB2 CET)SUB4M N, 90-1DEGREES, WAS SIMILARLY PREPD. REFLUXING SN (OAC)SUB2 AND HG(OAC)SUB2 IN AC SUB2O GAVE HG, AND 90.9PERCENT SN(OAC)SUB4. EQUIMOLAR AMTS. OF BU SUB2 SN(OAC)SUB2 AND SNCL SUB4 IN C SUB6 H SUB6 GAVE 82PERCENT (ACO)SUB2 SNCL SUB2, DECOMPD. 187-90DEGREES. THIS ALSO FORMED IN AC SUB2 O FROM HG(OAC)SUB2 AND SNCL SUB2. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR S UDC 548.0

SAMUS', I. D., and BELOV, N. V., Academician, Kishinev Polytechnic Institute imeni S. Lazo

"Crystalline Structures of Cobaltic Dioximines With Inner-sphere Selenocyanate and Thiocyanate Groups $NH_4[Co(DH)_2(SeCN)_2]\cdot 3H_2O$ and $NH_4[Co(DH)_2(SCN)_2]\cdot 3H_2O$"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 2, 1970, pp 333-336

Abstract: Results of the termination of the atomic structure of cobaltic dioximines with inner-sphere selenocyanate and thiocyanate groups $NH_4[Co(DH)_2(SeCN)_2]\cdot 3H_2O$ and $NH_4[Co(DH)_2(SCN)_2]\cdot 3H_2O$ confirm A. V. ABLOV's supposition that in Co dioximines where the trans-influence of the thiocyanate group is stronger, bonding of the latter group with Co is effected through S. The authors thank A. V. ABLOV for providing the initial substances for their study and for discussing the results.

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USSR

UDC 621.391:519.2

KLOVSKIY, D. D., SAMUSENKO, I. M.

"Problems of the Theory of Bimodal Signal Amplitude Distributions"

Radioelektronika v nar. kh-ve SSSR. Ch.1 -- V sb.(Radio Electronics in the National Economy of the USSR. Part 1 -- collection of works), Kuybyshev, 1970, pp 132-139 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A96)

Translation: The bimodal amplitude distribution of a signal has been detected experimentally more than once in real radio channels with randomly varying parameters. In some papers bimodality is connected with the existence of a duplex, discontinuous variable nature of propagation of radio waves in the channel.

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USSR

UDC 621.391.519.2

SAMUSENKO, I. M.

"Energy Characteristics of Signals at the Output of a Linear Dynamic System with Randomly Varying Stationary Parameters"

Radioelektronika v nar. kh-ve SSSR. Ch.1 -- V sb.(Radio Electronics in the National Economy of the USSR. Part 1 -- collection of works), Kuybyshev, 1970, pp 187-203 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A90)

Translation: The transformation of a narrow band random process in a linear dynamic system with randomly varying parameters (for example, in a shortwave communications channel with fading) is investigated. The energy characteristics of a generalized telegraph signal at the output of a channel with fading are investigated as an example. There is 1 illustration and a 2-entry bibliography.

1/1

USSR 5 UDC 616.921.5-036.22(470.51)"1966-'967" 6

AKSENOV, V. A., ORLOVA, N. N., SELIDOVKIN, D. A., AKSENOV, L. A., ZORIN, V. S., VOLOCHKOV, A. D., GLADINA, YE. B., SAMUSEV, N. F., ZAKSTEL'SKAYA, L. YA., and YEVSTIGNEYEVA, N. N., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Ministry of Health USSR

"Some Features of the 1966-1967 Influenza Epidemic in Glazov"

Moscow, VoProsy Virusologii, No 1, 1970, pp 97-101

Abstract: This epidemic occurred in two waves: the first in November-December, 1966, when few cases of influenza or other acute respiratory diseases were reported in most of the USSR and localities adjacent to Glazov, and the second in February, 1967. The first wave affected mostly young children, while the second wave affected children and adults to almost the same degree, 10.6 and 9.8 per 100 persons. The course of the disease was severe among children, but relatively mild among adults. The high incidence of influenza in the first wave, characteristic dynamics of the curve with a sharp rise, quick attainment of a peak, and sharp drop, as well as the results of serological examinations, implicated the A_2 virus as the 1/2

USSR

AKSENOV, V. A., et al., Moscow, Voprosy Virusologii, No 1, 1970, pp 97-101

causative agent. The second wave was attributed to the B virus. A peculiar virus - an atypical A, strain with altered antigenic structure - was also isolated during the epidemic. However, the absence of antibodies in both children and adults indicated that it did not play an etiological role in the outbreak.

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CORRELATION BETWEEN THE PURITY AND GRAIN SIZE OF NATIVE GOLD IN DEPOSITS OF THE NORTHEASTERN USSR -U-

AUTHOR--SAMUSIKOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 656-9

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GOLD, MINERAL DEPOSIT, GRAIN SIZE, HIGH PURITY METAL

CONTROL MARKING--NO RESTRICTIONS

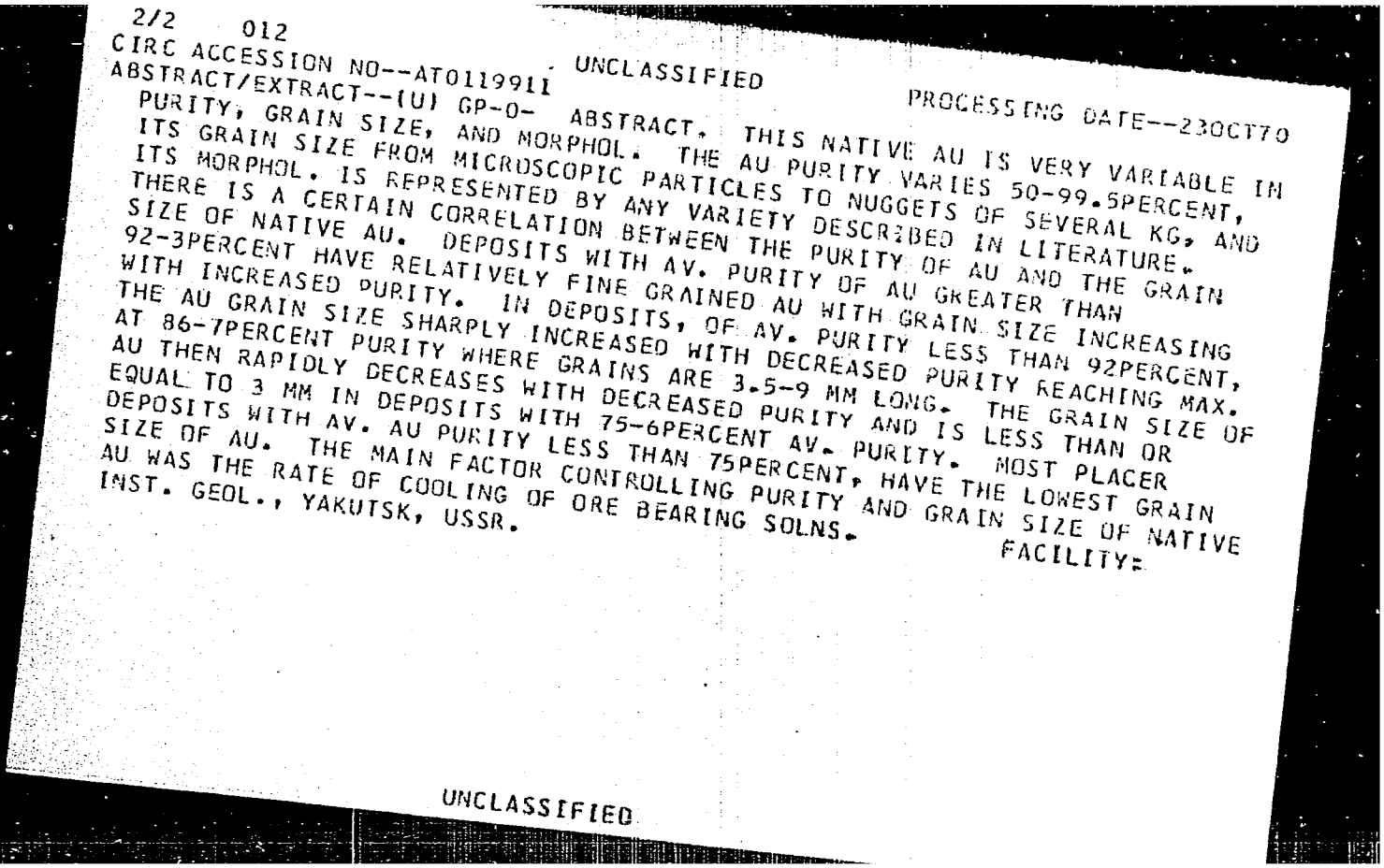
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1044

STEP NO--UR/0020/70/191/003/0656/0659

CIRC ACCESSION NO--AT0119911

UNCLASSIFIED



2/2 012 UNCLASSIFIED
CIRC ACCESSION NO--AT0119911 PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS NATIVE AU IS VERY VARIABLE IN PURITY, GRAIN SIZE, AND MORPHOL. THE AU PURITY VARIES 50-99.5PERCENT, ITS GRAIN SIZE FROM MICROSCOPIC PARTICLES TO NUGGETS OF SEVERAL KG, AND ITS MORPHOL. IS REPRESENTED BY ANY VARIETY DESCRIBED IN LITERATURE. THERE IS A CERTAIN CORRELATION BETWEEN THE PURITY OF AU AND THE GRAIN SIZE OF NATIVE AU. DEPOSITS WITH AV. PURITY OF AU GREATER THAN 92-3PERCENT HAVE RELATIVELY FINE GRAINED AU WITH GRAIN SIZE INCREASING WITH INCREASED PURITY. IN DEPOSITS, OF AV. PURITY LESS THAN 92PERCENT, THE AU GRAIN SIZE SHARPLY INCREASED WITH DECREASED PURITY REACHING MAX. AT 86-7PERCENT PURITY WHERE GRAINS ARE 3.5-9 MM LONG. THE GRAIN SIZE OF AU THEN RAPIDLY DECREASES WITH DECREASED PURITY AND IS LESS THAN OR EQUAL TO 3 MM IN DEPOSITS WITH 75-6PERCENT AV. PURITY. MOST PLACER DEPOSITS WITH AV. AU PURITY LESS THAN 75PERCENT, HAVE THE LOWEST GRAIN SIZE OF AU. THE MAIN FACTOR CONTROLLING PURITY AND GRAIN SIZE OF NATIVE AU WAS THE RATE OF COOLING OF ORE BEARING SOLNS.
INST. GEOL., YAKUTSK, USSR. FACILITY:
UNCLASSIFIED

USSR

UDC 533.275

LEVCHUK, E. A., CHUDNOVSKIY, A. F., and SAMUYLOVA, S. N.

"Low-Inertial Quartz Crystal High-Humidity Sensor Suitable for Agrometeorological Telemetric Systems"

Sb. tr. po agron. fiz. (Collected Works on Agronomic Physics), No 28, 1970, pp 75-76 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 2, Feb 71, Abstract No 2.32.1426)

Translation: This paper is a survey of the latest works on the inertia of quartz crystal adsorption sensors and their calibration charts. It is demonstrated that the linearity of the calibration characteristics of the sensors, their operating reliability and manufacturing simplicity can be increased by using piezoelectric crystal plates, well-known in optics and used to brighten silica film lenses, as the moisture-sensitive coating. There is 1 illustration and a 2-entry bibliography.

1/1

USSR UDC 616.831-055.98-085.217.24-039.71

SAMVELYAN, V. M. and MCHEDLISHVILI, G. I., Armenian Institute of Cardiology and Institute of Physiology, Academy of Sciences Georgian SSR

"Mechanism of Inhibition of Edema Formation in the Brain Under the Influence of Neurotropic Agents"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 5-9

Abstract: In experiments on rats, the effects of a number of cholinolytics differing in antiedemic action on various parts of the cerebral blood circulation, permeability of the vascular walls, and rate of metabolism in brain tissue were studied. The cholinolytic agents with muscarinolytic action - amizil, metamizil [methydiazil] and preparation 7351 - were found to possess much greater antiedemic activity than the cholinolytics with nicotinolytic action - arpenal, etpenal, or quateleron. The muscarinolytics intensified the compensatory constriction of the main cerebral arteries, whereas the nicotinolytics

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202810007-9"

USSR

SAMVELYAN, V. M. and MCHEDLISHVILI, G. I., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 5-9

dilated them, promoting transudation from the blood vessels into brain tissue. Preparation 7351, for example, depressed mitochondrial respiration, thereby preventing circulatory insufficiency from arising in the brain as a result of vasoconstriction. Moreover, injected into the animals prior to brain injury, it prevented the cerebral vessels from becoming more permeable (to P^{32}).

2/2

Acc. Nr: AP0038115 Ref. Code: UR 0326

PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1, pp 139-146

WATER-RETAINING FORCES IN CELLS OF VARIOUS PLANTS IN CONNECTION WITH THEIR STABILITY WITH RESPECT TO DESSICATION AND FREEZING DURING FORMATION OF EXTRACELLULAR ICE

G. A. SAMYGIN, A. Z. LIVSHIN

K. A. Timiriazev Institute of Plant Physiology, USSR Academy of Sciences, Moscow

Variation of the water-retaining force in living or killed tissues was studied during removal of water from them by dessication and slow freezing. From the difference of these quantities in living and dead tissues the negative turgor in the cells was calculated. Negative turgor remained in cells containing such amounts of water which led to death of 50% of the cells. On further removal of water it continued to grow although it was not observed in preliminarily killed cells. It is shown that additional water-retaining forces are present in live cells which disappear when the water loss is sufficient to lethaliy affect the cells. Negative turgor in cells of various plants on the verge of death varies. It is from 2 to 6 times greater in onion scale and collard stem cells than in cells of the

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leaf parenchyma of wheat. This confirms the assumption made earlier that the main cause of cell death of the first two plants occurring on removal of water is the detrimental effect of mechanical forces on the protoplasm and in particular of negative turgor; the cause of death of leaf parenchyma cells is dehydration of the protoplasts.

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19731168

USSR

UDC 581.1.036

SANYGIN, G. A., RAKITINA, Z. G., and LIVSHIN, A. Z., Institute of Plant Physiology imeni K. A. Timiryazev, USSR Academy of Sciences, Moscow

"The Resistance of Winter Wheat Tissue to Freezing and Drying in Unfavorable Gas Mixtures"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 1, 1971, pp 224-227.

Abstract: To determine whether the formation of intracellular or extracellular ice is responsible for the increased deterioration of wheat frozen and dried in gas mixtures of a composition different from that of air, samples of regular and tempered winter wheat blades and sprouts were frozen and dried in atmospheres with various percentages of oxygen, nitrogen, and carbon dioxide. After thawing and rehydration, the blades were investigated microscopically and the sprouts were allowed to grow roots in a suitable medium. The results showed that increased concentrations of carbon dioxide and decreased

USSR

SAMYGIN, G. A., RAKITINA, Z. G., and LIVSHIN, A. Z., Doklady Akademii Nauk SSSR, Vol 198, No 1, 1971, pp 224-227

concentrations of oxygen and of nitrogen raised the percentage of irreversibly destroyed cells to the same degree in samples which were frozen and in those which were dried. Since drying damages cells through withdrawal of intracellular water and formation of extracellular ice, it was concluded that unfavorable gas mixtures exert their detrimental effects during freezing of wheat by enhancing the withdrawal of intracellular water and the formation of extracellular ice.

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TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV, SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: L. A. BERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

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USSR

UDC 632.95

(3)

GOLYSHIN, I. M., MONOVA, V. I., KLIMKINA, L. P., IVANOVA, S. N., MEL'NIKOV, N. N., KHUSNETDINOVA, F. I., SHVETSOV-SHILOVSKIY, N. I., SAMYSHKINA, M. A., and BOLONINA, YE. I.

"An Antiseptic"

USSR Author's Certificate No 355008, Div B, filed 11 Jan 71, published 13 Nov 72 (from RZh-Khimiya, No 14, 25 Jul 73, abstract No 14N616 P by T. A. Belyayeva)

Translation: It is proposed that 4,5,6-trichlorobenzoxazolinone-2 (I) be used as an antiseptic for nonmetallic materials, and at the same time is a bactericide, which considerably extends the sphere of its action. Compound I is used in a 2-2.5% concentration to control mold, wood-rotting and wood-discoloring fungi.

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1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--RIGHT ASCENSIONS AND FLUX DENSITIES OF 30 RADIO SOURCES AT A FREQUENCY 60 MHZ -U-

AUTHOR-(03)-ASLANYAN, A.M., MALUNYAN, V.G., SANAMYAN, V.A.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NAUK ARMYANSKOY SSR, 1970, NR 41, PP 9-12

DATE PUBLISHED------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--COSMIC RADIO SOURCE, GALAXY, SPECTRUM

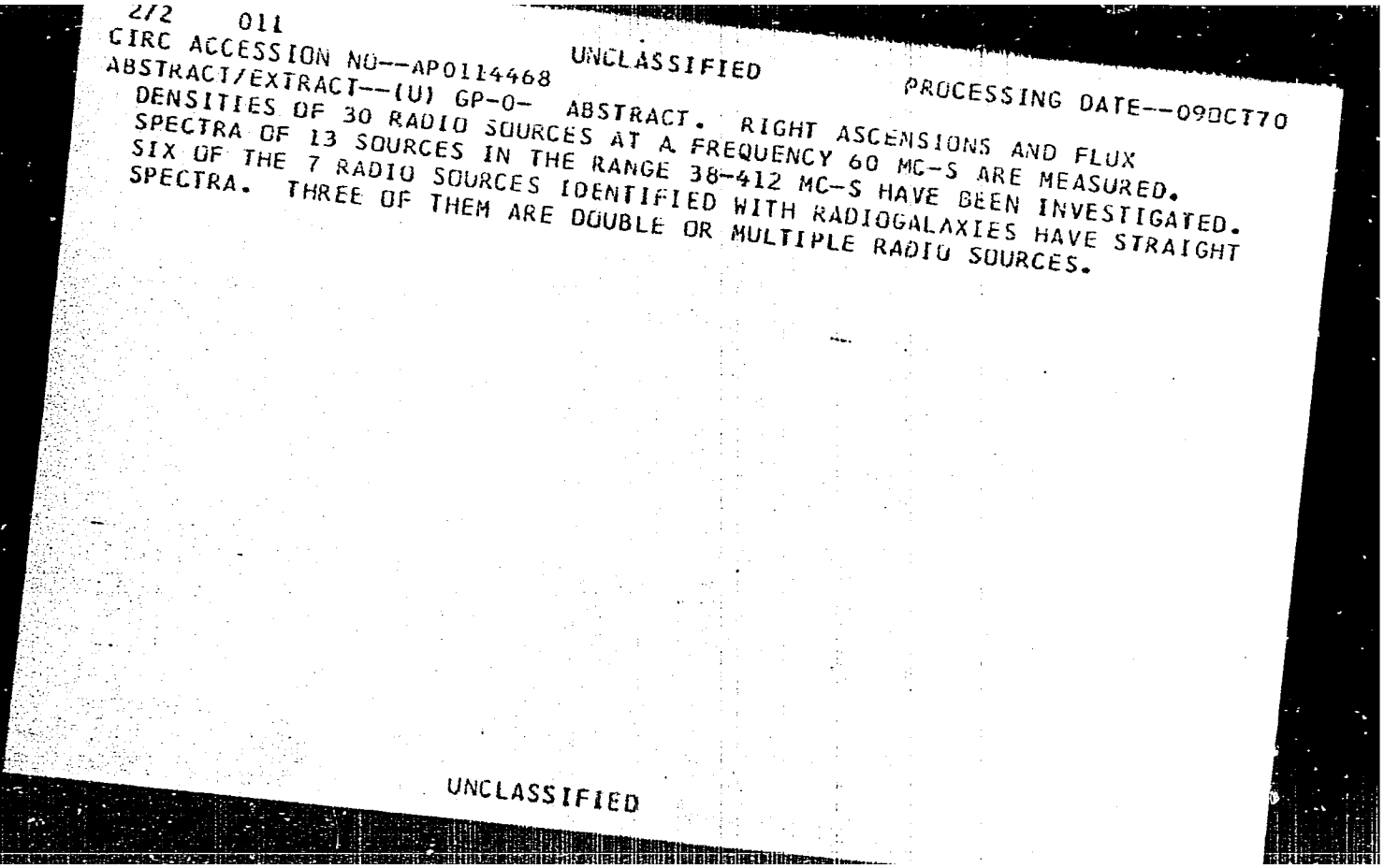
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0072 STEP NO--UR/2620/70/000/041/0009/0012

CIRC ACCESSION NO--AP0114468

UNCLASSIFIED



2/2 011 UNCLASSIFIED
CIRC ACCESSION NO--AP0114468 PROCESSING DATE--09OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RIGHT ASCENSIONS AND FLUX DENSITIES OF 30 RADIO SOURCES AT A FREQUENCY 60 MC-S ARE MEASURED. SPECTRA OF 13 SOURCES IN THE RANGE 38-412 MC-S HAVE BEEN INVESTIGATED. SIX OF THE 7 RADIO SOURCES IDENTIFIED WITH RADIOGALAXIES HAVE STRAIGHT SPECTRA. THREE OF THEM ARE DOUBLE OR MULTIPLE RADIO SOURCES.

UNCLASSIFIED

USSR

SANASARYAN, K. M. UDC: 8.74

"Using Dispatcher Control Operators in Modeling Operative Situations"

V sb. Mat. metody issled. i optimiz. sistem (Mathematical Methods of Studying and Optimizing Systems--collection of works), Kiev, 1971, pp 340-347 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V645)

[No abstract]

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USSR

SANATINA, K. G.

UDC 615.917

"Teratogenic Effect of Anabasine Sulfate on the Organism of Warm-Blooded Animals" V sb. Vopr. epidemiol. i gigiyeny v LitSSR (Problems of Epidemiology and Hygiene in the Lithuanian SSR -- collection of works), Vil'nus, 1971, pp 137-142 (from RZh-Farmakologiya, Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.812)

Translation: Rats were injected intraperitoneally with anabasine sulfate (I) in doses comprising the DL_{50} (105 mg/kg) and 1/10 DL_{50} (10.5 mg/kg) during the first 3 days of pregnancy or 1/20 DL_{50} (5.25 mg/kg) over the time of the entire pregnancy. For inhalation poisoning (4 hours each from the first to the seventh day of pregnancy), a concentration of 0.28 mg/m^3 was used. Compound I had an embryotoxic effect expressed in the resorption of the embryos, a loss of weight, hemorrhaging in various parts of the body. The conclusion was drawn that I has a teratogenic and embryotoxic effect.

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USSR

UDC 628.346

ZOLOTAVIN, V. L., KONSTANTINOVICH, A. A., SANATINA, V. N., PUSHKAREV, V. V., and PETROV, V. S.

"Deactivation of Radioactive Sewage by the Method of Two-stage Coagulation of Iron Hydroxide"

Leningrad, Radiokhimiya, Vol 13, No 1, 1971, pp 164-166

Abstract: Comparison of the two-stage coagulation process with the single stage method showed that with identical consumption of iron sulfate the deactivation of sewage is increased 12-20 fold in respect to the α-activity, and 2-5 fold in respect to the β-activity when the two-stage method was used.

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CSO: 1841-W

- END -

USSR

SANAYA, T. V.

"Colorimetric Investigation of the Action of Ionizing Radiation on Isolated Frog Skin"

V sb. Shestaya Vses. Konf. po Kolorimetrii, 1973, Rasshir. Tezisy dokl. (Sixth All Union Conference on Colorimetry, 1973, Expanded Abstracts of Papers), Tbilisi, Metsniyereba, 1973, pp 515-518 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73, Abstract No 24F 1431)

Translation: Comparison of the results of colorimetric studies with the curve of the differences of electric potentials (DEP) of the frog skin shows that there exists a sufficiently close correlation between the data obtained by these two methods. On the curves characterizing relative changes of heat capacity, as well as on the DEP curves two maxima are observed. However, the change in the DEP of frog skin begins at 20°, while the change in the relative heat capacity begins to be observed from 37° and higher. Evidently initial changes of the DEP are not connected with structural changes in the skin.

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USSR

UDC 669.25'71:536.722

PETRUSHEVSKIY, M. S., YESIN, Yu. O., GEL'D, P. V., and SANDAKOV, V. M.

"Effect of Short-Range Order on the Heats of Mixing of Cobalt Melts With Aluminum"

Ordzhonikidze, Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, No 2, 1972, pp 21-25

Abstract: According to earlier research by the same authors, cobalt melts with aluminum represent a system with strong interaction between the particles of dissimilar components which does not follow the regularities of the theory of regular solutions. The thermodynamic characteristics of such alloys can be described only by taking into account the effect of the short range order. This study used this approach to estimate the interatomic interaction energies in molten Co-Al alloys, calculate their heats of mixing at 1670°C, and to provide information on the temperature-concentration dependences of their kinematic viscosity and density. (3 illustrations, 6 bibliographic references). [Ural Polytechnic Institute, Department of Physics]

1/1

USSR

UDC: 621.385.623.4

BURNEYKA, K. P., KANAVETS, V. I., MOZGOVOY, Yu. D., SANDALOV, A. N.

"On the Optimum Parameters of Multicavity Klystron Bunchers"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1971, vyp. 2, pp 29-37 (from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6A155)

Translation: The parameters of bunchers in klystrons with 2-6 cavities are optimized for quality. Numerical methods of solving equations are used, employing a disc model of the beam. It is shown that Coulomb forces can be used to improve electron bunching. Optimum bunching is achieved under conditions where nonlinear processes take place in the space-charge waves. Optimum phase shifts between the cavity fields and the current correspond to energy transfer from the beam to the fields of the cavities. The quality index increases with an increase in the total number of klystron cavities. As the number of the drift region increases, the optimum value of the length of the drift region gradually decreases, while the alternating voltages of the gaps increase. Bibliography of 1 title. Resumé.

1/1

USSR

BELOV, B. I., SANDIMIROV, V. P. UDC: 51:621.391

"On the Theory of Linear Binary Codes"

Irkutsk, Tr. po prikl. mat. i kibernet. Sib. energ. in-t Sib. Otd. AN SSSR (Works on Applied Mathematics and Cybernetics. Siberian Power Engineering Institute of the Siberian Department of the Academy of Sciences of the USSR), 1972, pp 108-132, bibl. of 5 titles (manuscript deposited in VINITI 26 Dec 72, No 5285-72 Dep.) (from RZh-Kibernetika, No 5, May 73, abstract No 5V585 DEP by the authors)

Translation: The paper considers several variations of lexicographically ordered binary codes, and studies some of their properties. In particular, a sufficient condition is formulated for the linearity of a lexicographically ordered binary code. An operator for expansion of binary codes is then introduced according to which each zero of the initial code is replaced by the matrix $\begin{pmatrix}0&0\\0&1\end{pmatrix}$, and each one is replaced by the matrix $\begin{pmatrix}1&1\\1&0\end{pmatrix}$. It is shown that the expansion operator has the

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